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From: O. L. CORDES

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Report for March, 1965: Cord-21-65A

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HUMAN RADIATION EXPERIMENTS

RECORDS PROVENANCE FORM

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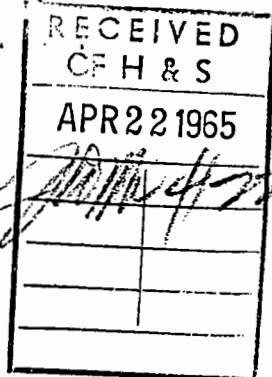
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CROSS REFERENCES:

ITEMS OF INTEREST:



PHILLIPS PETROLEUM COMPANY
Atomic Energy Division
Idaho Falls, Idaho

April 20, 1965

TAN Health Physics Progress
Report for March, 1965
Cord-21-65A

REPOSITORY INEL

COLLECTION SNAPTRAN

Mr. J. W. McCaslin
OFFICE

BOX No. P-24724, RSR# P-2133
TAN MONTHLY REPORTS FOR 1965
FOLDER H.P. PROGRESS REPORT FOR 3/65

The monthly report of TAN Health Physics Section for March, 1965, is as follows:

PM-2A

Health Physics coverage for work being initiated on the PM-2A reactor located in the Hot Shop continues to be one of the major jobs during this period. Examination, decontamination, removal of some of the reactor vessel shielding, dye penetrant checking of the reactor vessel head and assembly of the remotely controlled ultrasonic testing device were included during this period on the PM-2A.

EG&G DOLLY

A health physics survey of the EG&G dolly used during the SNAPTRAN-3 destructive test was requested by STEP. The dolly is to be modified for EG&G equipment to be used on the SNAPTRAN-1 Destructive Test Program. Results of the survey showed less than 200 d/m/100 cm² surface contamination and less than 0.2 mr/hr was detected on the dolly and existing equipment.

DECONTAMINATION FACILITIES

Decontamination, chem cleaning, and sandblasting work loads continue to be greater than manhours available.

Major items decontaminated include:

1. Tinius Olsen machine
2. Cover plate for No. 2 boiler
3. Master slave manipulator from HCA
4. Westinghouse ALW cluster transfer and 48 three hundred fifty pounds reactor head bolts from ALW
5. Parts from STEP
6. 12 casks
7. TRA remotely controlled saw
8. 1,000 gallon tank
9. Two PBF impile tubes plus several miscellaneous items.

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LAUNDRY

Arrangements have been made with General Electric personnel to ship their laundry to the CF Laundry along with the TAN laundry on the warehouse truck. This change in procedure will save using additional vehicles and personnel and will result in a significant labor and transportation saving each month.

FUEL STORAGE

The major portion of the fuel elements for the first loading of the EBOR reactor have been received and stored in the TAN 607 fuel storage vault.

UNUSUAL OCCURRENCES

The dosimeter worn by a welder working on the PM-2A reactor for a short period of time was found to be off scale. A request for his film badge to be pulled for readout was made by TAN Health Physics and the film badge results verified a suspected faulty dosimeter.

On 3-12-65 a health physics survey made on some lead pigs being removed from EBOR disclosed some small flux wires which were reading approximately 100 mr/hr at contact. These casks had formerly been used by GE and before the wires were discarded in the hot waste, GE personnel were contacted.

On 3-16-65 at approximately 1000 the entrance and eating area friskers alarmed. Investigation revealed that the source was an unshielded access plug into the Hot Shop. The radiation level in the Hot Shop Change Room was 800 mr/hr caused by fuel that had just been transferred to the Hot Shop. This plug was shielded and a request was made to survey the Hot Shop, HCA, and RML access plugs for proper shielding.

On 3-22-65 at approximately 0900, a TSF yardman on entering the TAN-607 area alarmed the frisker. A 2.5 mr/hr spot was detected near his rear pant pocket. He had not been in a contaminated area that morning and his trousers had been laundered since he last wore them to work. He requested a contamination survey of his home, which was made by a health physicist that evening. All smears and monitoring results were negative.

On 3-31-65 a group of Torkelson workers entered the contaminated sewage disposal area near TAN-607. The radiation ribbon had blown down and the men stated that they hadn't noticed the radiation ribbon until after they had entered the restricted area. They contacted health physics and a survey showed one man's shoes were contaminated. The shoes were decontaminated by our decon personnel and returned to the individual.

SNAPTRAN GRID

A PTR entitled, "Monitoring Program for the SNAPTRAN-2 Destructive Test", has been completed and is in the process of being printed.

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Background samples taken on the outer fringe of the SNAPTRAN grid during an inversion condition was obtained during this period. Two microsorban filters taken from hi-vol samplers were analyzed on the gamma spectrometer, showing the presence of radon and its short-lived daughters.

A large kite of Weather Bureau design has been constructed and flight tested by Health Physics personnel. It is planned to use at least four of these kites to make vertical fission cloud diffusion measurements over the SNAPTRAN radiological grid during the destructive test. Tests with favorable winds show that cloud beta activity can be measured at various heights up to 300 feet by suspending film badges on a vertical line supported by the kite. This appears to be an economical method of obtaining essential vertical diffusion measurements necessary in sizing the cloud for fission release calculations.

Different types of ionizing radiation were demonstrated to a number of TAN personnel through the aid of a cloud chamber. A great deal of interest was shown by personnel observing the cloud tracks formed by alpha, beta, and cosmic radiation.

LOFT

A meeting was held between representatives of Phillips Petroleum Company and various manufacturers to review drawings and specifications on the LOFT pressure vessel. It was generally agreed that a period of 16 to 18 months would be needed to fabricate the vessel.

Studies are being conducted to determine reactivity co-efficients for zircaloy-clad core, flux control plots, decontamination evaluating coatings and sealants fission product sampling design and the possibility of LOFT control rod ejection accidents for the proposed zirconium clad core.

STEP

A series of two-drum mechanical performance tests were conducted on the impulse drums to find optimum meshing of the tooth clutch teeth for the coupled drum nuclear impulse tests. Following one of these tests it was discovered that the drum shaft on "D" drum had been twisted. Investigation revealed that the damage to the shaft was the result of an unplanned impulse which occurred following a charge valve failure.

Measured gamma dose rates from short lived fission product decay following a SNAPTRAN-1 transient test has been compared by STEP personnel with the predicted dose rates obtained from the analytical models presented in WAPD-R(F)-38. The results indicate that theoretical dose rates are in close agreement with the measured dose rates.

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PERSONNEL

Ray Fielding, Health Physics Technical Assistant at TAN, was transferred to the ICPP Health Physics Section on March 8, 1965.

SPERT-STEP SAFEGUARD COMMITTEE

March 1, 1965, Dr. Robert K. Stitt was appointed Deputy Chairman of the Safeguard Committee as an alternate to G. O. Bright.

March 8, 1965 - Request for Approval to Modify SNAPTRAN-1 Control System
Approved

March 25, 1965 - Request for Approval to Modify SNAPTRAN-1 Control System
Approved

March 31, 1965 - STEP SPM change - SPM 2.200 (Wil-71-65A-N) Approved.

SUMMARY OF ROUTINE WORK

Smears	1325
Direct reading dosimeters issued	15
Body fluid samples	
Routine	15
Special	0
Liquid samples	
Waste water	7
Radioactive shipments	
Off-site	3
On-site	29
Burial ground	3
Laundry	9
Safe work permits	71
Beryllium analysis	0
Safety Meetings	1
Excess exposure requests	0
Whole body analyses	5
Green Tags	141

MAN HOUR TABULATION

Decontamination Manhour Tabulation

Regular assigned hours	304	Time charged to work request listed	303 $\frac{1}{2}$
Overtime	48	Time charged to clothing issue room	
	<u>352</u>	work	39
		Vacation	8
		UAB	1 $\frac{1}{2}$
			<u>352</u>

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EXEMPT	NONEXEMPT	TOTAL	EXEMPT	NONEXEMPT	TOTAL
<u>Scheduled Hours</u>			<u>Actual Hours Worked</u>		
776	1472	2248	744	1388	2132
<u>Overtime</u>			<u>Absences</u>		
0	81 $\frac{1}{2}$	81 $\frac{1}{2}$	S - 8	45 $\frac{1}{2}$	53 $\frac{1}{2}$
			SF - 16	8	24
			V - 8	112	120
TOTAL		2329 $\frac{1}{2}$	TOTAL		2329 $\frac{1}{2}$

OLCordes:dc/ALS

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